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METROPOLITAN LIFE INSURANCE COMPANY

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The Geographic Distribution of Homicide in the United States

HOMICIDE, in its wide prevalence throughout the United States, presents one of the unsolved social problems of the country. Why should the homicide rate in our white population be three times as high among us as across the border among our neighbors in Canada, and ten or eleven times as high as in England? Several circumstances, no doubt, contribute to this effect, but for the time being we must be satisfied with accepting the fact which confronts us.

Of all the states, Nevada had the highest homicide rate among white persons, namely 16.5 per hundred thousand, during the years 1929 to 1931; the average rate for the country as a whole being 5.5. For colored people, the unenviable distinction of heading the list falls to Missouri, with a rate of 72.2 per hundred thousand, the average for persons of this racial group being 38.4. The lowest homicide rates, on the other hand, were recorded in Maine and Vermont for white persons, each with a rate of 1.3 per hundred thousand, and in New Hampshire and Vermont for colored persons, where no deaths from this cause were recorded in any of the three years under consideration.

Above-average homicide rates are concentrated in certain areas of the country, as is indicated by the darker shading in the two maps on page 2. For the white population, the region of highest homicide rates forms two patches, one in the Southeast, and one mainly in the Mountain States, with the State of Oklahoma forming a connecting link.

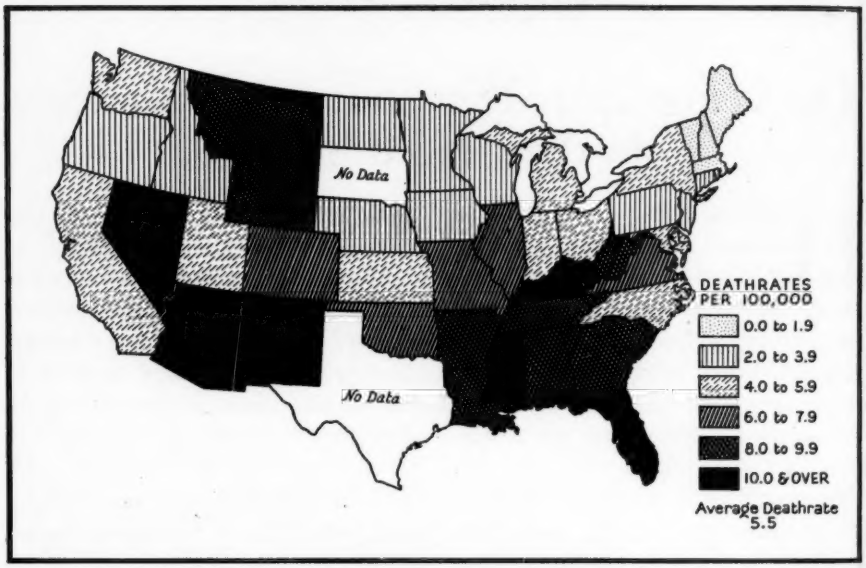
In the southeastern area, particularly high rates among white persons (over 10 per 100,000) are recorded in the States of Florida, Kentucky and Mississippi. Rates between 8 and 10 per 100,000 are recorded in West Virginia, Tennessee, South Carolina, Georgia, Alabama, Louisiana and Arkansas.

In the Mountain State region, very high rates are found in Nevada, Arizona and New Mexico. Montana and Wyoming have rates over eight per hundred thousand.

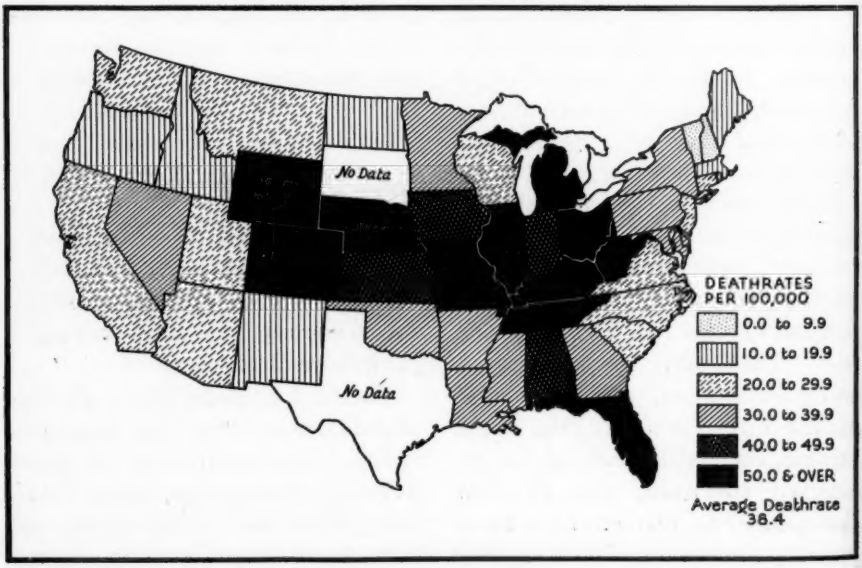
The New England States are distinguished by very low homicide rates. The adjacent Middle Atlantic States also, New York, New Jersey and Pennsylvania, fall below the average for white persons.

GEOGRAPHIC DISTRIBUTION OF HOMICIDE
United States, 1929 – 1931

WHITE PERSONS



COLORED PERSONS



There are also low homicide rates among the whites in the Middle West and Far West, as will be seen from the light shading in the map on page 2. Data for Texas and South Dakota are not available.

The geographic distribution of homicides among colored persons differs materially from that among the whites. This is illustrated by the chart in the second panel opposite. Strangely enough, a group of States with high homicide rates cluster about Indiana, namely Michigan, Ohio, West Virginia, Kentucky, Tennessee, Illinois and Missouri, all of them with rates in excess of 60 per 100,000.

The majority of Southern States, with their relatively high proportion of negroes, show, contrary to the prevailing impression, below-average rates of homicide among colored persons. Mississippi, the only State where the colored population exceeds the white, has a homicide rate of 35.6 per 100,000 colored persons, which is less than the average of 38.4 in this group throughout the United States.

It should, of course, be realized that homicide is mainly an urban problem. Rural areas show uniformly lower rates. This aspect of the matter we expect to deal with in a later issue of the BULLETIN.

Mortality Experience, January to September, 1933

EXCEPTIONALLY good health conditions have prevailed during the nine-month period from January to September 1933, among the people of the United States and Canada. This observation is based upon the mortality experience of the many millions of Industrial policyholders of the Metropolitan Life Insurance Company who form a considerable part of the general population of these two countries. Their deathrate during this period, 8.8 per 1,000 persons, figured on an annual basis, is the lowest rate of any January-September period on record, except one, namely that of the corresponding period last year. This excellent health showing is the more remarkable considering the inauspicious start of the current year. At the end of March, the 1933 mortality figure was 8 per cent. higher than that for the like part of 1932; now, at the end of the third quarter, the cumulative deathrate for 1933 is but 2.5 per cent. above the record low figure for the same calendar period, namely 8.6 per 1,000, registered in 1932. Both white and colored races have enjoyed the excellent health record of the year.

Tuberculosis

A most favorable item in this year's record is the continued decline of the deathrate from tuberculosis. The cumulative rate to date is 67.6 deaths per 100,000 persons, a new minimum. The rate for this nine-month period, for white and colored persons combined, has declined 5.9 per cent. since last year. It has fallen 13.1 per cent. from the

rate of two years ago and 41.7 per cent. from that of ten years ago. As lower tuberculosis rates are normally expected in the last quarter of the year, the indications are that the 1933 mortality rate for tuberculosis in the United States and Canada will reach a new low mark.

While tuberculosis among colored persons has registered a minimum rate this year, the disease still remains a serious problem, as shown by the fact that the mortality among the colored is about three and one-half times that of white persons. The continuous decline in mortality from tuberculosis, in the face of adverse economic conditions, is one of the most remarkable happenings in health history. It is a convincing illustration of the effectiveness of the health teachings that have been carried on for years in the home, factory, and school, by both public and private agencies.

Children's Diseases

Deaths from measles, scarlet fever, diphtheria and whooping cough are being reported in diminishing numbers. The improvement in the diphtheria mortality situation is the most gratifying. This disease has shown a steady downward trend over a considerable period of time, and, what is even more pleasing, the rate of decline (except between 1931 and 1932) has been rapidly accelerating. In the brief period of three years, mortality from diphtheria has dropped altogether 64 per cent. With this rate of decline, diphtheria should become, a few years hence, as negligible a cause of death as typhoid fever is today. This remarkable decrease in mortality from diphtheria is unquestionably the direct outcome of the campaign for the protective immunization of children. Both white and colored children have benefited through these anti-diphtheria activities.

Puerperal Conditions

Another favorable development has been the continuing downward trend of the deathrate from puerperal diseases, among both white and colored women. Part of this decline in maternal mortality, however, is attributable to the falling birthrate and the correspondingly diminished exposure of women to the risks of maternity.

Deaths by Violence

Automobile fatalities, so far, have occurred at a higher rate than in the corresponding pericd of 1932. This unfavorable turn in the automobile mortality situation has been in evidence during the past month only; in the eight-month period January to August, the deathrate from this cause was identical with last year's figure. Accidents, other than those resulting from automobiles, show a slightly higher fatality rate, also, than in the corresponding nine-month period of 1932, perhaps as a reflection of renewed industrial activity in various parts of the country.

Suicides among white persons, it is gratifying to report, have declined

since last year. The improvement, however, has been exclusively among white persons; the rate among the colored, so far, shows no decrease, but has actually established a high record. Nevertheless, it is still considerably lower than that for white persons.

Deathrates per 100,000 Persons Exposed. First Nine Months of 1931, 1932, 1933 Compared. By Color, for Principal Causes of Death. Metropolitan Life Insurance Company, Weekly Premium-Paying Industrial Business.*

Causes of Death	Deathrates per 100,000 Persons Exposed*					
	White			Colored		
	Jan.-Sept. 1933	Jan.-Sept. 1932	Jan.-Sept. 1931	Jan.-Sept. 1933	Jan.-Sept. 1932	Jan.-Sept. 1931
Total—All Causes	807.9	785.8	811.8	1505.3	1490.0	1587.3
Typhoid fever	1.2	1.4	1.5	3.7	2.5	5.1
Measles	2.0	2.2	4.0	.7	1.1	2.1
Scarlet fever	3.0	3.2	3.6	.9	1.1	1.7
Whooping cough	2.5	3.3	3.7	2.2	4.1	3.5
Diphtheria	2.3	4.0	4.1	.9	1.8	2.2
Influenza	21.1	16.4	20.0	44.1	40.1	58.4
Meningococcus meningitis	1.2	1.2	2.0	2.1	1.9	6.8
Tuberculosis (All forms)	52.8	56.0	58.6	188.8	200.4	227.2
Tuberculosis of respiratory system	47.3	49.2	51.8	167.4	178.1	199.8
Tuberculosis of the meninges, etc.	2.3	2.8	2.9	5.1	5.2	6.5
Other forms of tuberculosis	3.2	4.0	3.9	16.2	17.0	21.0
Cancer (All forms)	94.1	88.5	81.9	101.0	99.9	89.0
Diabetes mellitus	23.9	22.1	20.5	28.0	25.7	24.1
Alcoholism	2.1	2.3	2.7	2.4	3.8	3.9
Cerebral hemorrhage; apoplexy	57.4	54.4	53.7	127.0	125.7	126.1
Diseases of heart†	151.1	142.6	137.1	281.2	262.8	264.2
Total respiratory diseases	68.2	68.6	82.3	124.6	134.2	162.0
Bronchitis	2.4	2.4	2.9	3.5	3.8	4.1
Bronchopneumonia	24.4	24.8	31.1	34.5	35.2	45.1
Pneumonia (lobar and undefined)	34.3	35.3	41.1	75.9	84.0	100.5
Other diseases of resp'y system	7.0	6.2	7.2	10.6	11.0	12.3
Diarrhea and enteritis	10.5	11.6	15.2	11.3	10.6	15.8
Under 2 years	7.8	8.8	12.4	4.8	4.3	8.4
2 years and over	2.7	2.8	2.9	6.5	6.3	7.4
Acute nephritis	2.6	3.0	3.4	11.8	10.8	12.2
Chronic nephritis (Bright's disease)	59.7	59.1	58.1	141.9	142.0	139.6
Puerperal state—Total	9.2	10.2	10.5	15.3	17.1	18.5
Total external causes	69.4	69.3	74.2	106.2	101.4	111.2
Suicides	10.6	11.2	10.3	8.6	7.9	6.7
Homicides	3.2	3.0	3.9	30.0	30.8	29.9
Accidents—Total	55.7	55.0	60.1	67.6	62.7	74.5
Automobile accidents	19.0	18.5	20.7	20.8	20.1	24.1
All other diseases and conditions	173.6	166.2	174.7	311.3	303.0	313.7

*All figures in this table include insured infants under one year of age. The rates for 1933 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†Excludes pericarditis, acute endocarditis, acute myocarditis and angina pectoris.

Unfavorable Items

In January of this year, serious damage was done by a widespread epidemic of influenza. The deathrate from this disease, 82 per 100,000, was higher than in January, 1932, 1931 or 1930. Influenza mortality in February continued to be above normal. Conditions improved, however, as the year advanced, so that at the end of nine months the cumulative rate from this cause levelled off to 24 per 100,000, which is about one-fourth higher than in 1932, but identical with the influenza figure for the like period of 1931.

The cancer situation assumes increased importance as each succeeding year witnesses a further rise in the deathrate. For 1933 the crude rate is 95 per 100,000, or 5.7 per cent. higher than for the like period of 1932. This increase is less than the corresponding increase from 1931 to 1932, which was 8.5 per cent. For white persons specifically, the crude rate has advanced 6.3 per cent. over last year's figure; for colored persons, only 1.1 per cent. These rates should be viewed with caution, however, for the true rate of increase can be determined only by giving due consideration to changes in the age composition of the insured population from year to year. An older population will naturally show a higher cancer rate than a younger one. A detailed discussion of the increases from cancer during recent years will be found in the article following on this page.

Organic heart disease is the leading cause of death both among the insured and the general population. This year, like the two preceding ones, is distinguished for the marked rise in the crude rates of mortality from heart disease. For white persons the increase in 1933 over 1932 amounts to 6 per cent.; for colored persons it is 7 per cent. Chronic nephritis has increased slightly since a year ago.

The summary table on page 11 presents the crude deathrates from certain of the more important causes, for all persons, during the first nine months of 1933 and 1932. The table on page 5 gives more detailed information concerning these and other causes of death by color during 1933, 1932 and 1931.

The Present Status of Cancer Mortality

THERE is no denying the extremely serious situation that confronts us in the continuously rising deathrate from cancer. The year 1932 established a particularly bad record with an increase of 3.2 per cent. in the deathrate from this cause in the general population, over the rate of the preceding year, the figures for 1932 and 1931 being 108.2 and 104.8 per 100,000 respectively. This increase was the highest that has taken place in any year since 1920. Going back one more year and comparing 1932 with 1930, we find an increase of 5 per cent.

The mortality experience of the Industrial Department of the Metropolitan Life Insurance Company presents an essentially similar picture. At first sight, indeed, the increase in the crude cancer mortality for this group of persons seems to outrange by a big margin that for the general population. The increase in the crude deathrate from cancer, among premium-paying policyholders, was no less than 16.3 per cent. in the year 1932, as compared with 1930.

But it must be borne in mind that an aging population necessarily brings with it an increasing deathrate from cancer, even if there is no actual turn for the worse in the mortality from this cause at each age of life. In making comparisons for such a short period of time as two or three years, in the general population, this item is not very important, since the process of shift to older ages is relatively slow. We can, therefore, in dealing with figures relating to such a population, be guided essentially by the directly observed crude deathrate. The situation is different when we consider the statistics collected for a body of insured persons. Here, relatively rapid changes in age distribution are possible, and if we are to obtain a truly representative picture from an observation of the deathrates in such a group of persons, it is necessary to be guided, not by the crude deathrates, but by standardized deathrates, that is, rates that are computed for a population which remains unchanged in its age composition.

When properly corrected by standardizing, the cancer mortality experience of the Industrial policyholders falls essentially in line with that of the general population. The increase from 1930 to 1932 is then found to be, not 16.3, but only 6.1 per cent., a figure not very widely different from the 5 per cent. cited above for the general population.

While, for purposes of relative comparison, the standardized figures must be our guide, it must not be forgotten that the crude figures do represent an actual situation. The aging of the population is a fact with which we must reckon. In so far as it represents a continuous process, its effect will tend to be felt in the future even more than in the past. The aging of the group of policyholders, however, is not necessarily a continuously progressive movement, so that increases even in the crude rate of as much as 16 per cent. in two years will not, it is to be hoped, occur again in the near future. The latest figures available, covering the first nine months of the current year, show, in fact, some degree of recession in the rate of increase. We may, therefore, feel encouraged to hope that the unusually high increase in 1932 may not be representative of a definite trend, but may rather be looked upon as one of those isolated high points that occur in any statistical series. The unpleasant fact nevertheless remains, that we are confronted with an unremitting series of increases in the reported deathrate from cancer over the past few decades.

The Diminishing Deathrate from Childhood Diseases in an Aging Population

THE diseases of childhood have been greatly reduced both as to cases and deaths, and we may with confidence look forward to still further improvement in the prevention and treatment of these conditions. But even if no such gains were to be secured, the number of cases and of deaths from these diseases per 100,000 of the total population would necessarily continue to decrease for many years to come, simply through the fact that the proportion of children in the population is decreasing. In 1930 the total deathrate, per 100,000 of population, from measles, scarlet fever, diphtheria and whooping cough combined was 14.8. By the year 1970, if the actual mortality from these diseases at each age of life remained the same as in 1930, the total deathrate, per 100,000 of population, from these four diseases, would be 11.1, and after that date it would remain essentially constant. These figures are based on a reasonable forecast of the age distribution which we expect in the future.

Looking back, we can figure on the basis, not of *estimated* but of *observed* age distribution, applying in each case to the several age groups the specific deathrates observed in 1930. Had the mortality from the four principal communicable diseases of childhood, at each age of life, been as favorable in 1850 as in 1930, the deathrate from them would have been 22.6 per 100,000, or, say, double that of the estimate for 1970. Even as recently as 1900 the corresponding figure would have been 18.6 per 100,000. Actually, of course, at these earlier dates, the mortality from these diseases was very much higher. Thus in 1900, the actual deathrate was not 18.6 but 75.7 per 100,000. In this article, however, we are concerned only with the effect of the changing age distribution, in the population, and this alone would have accounted, from the year 1900 to 1930, for a fall in the deathrate from these causes from 18.6 to 14.8, that is, a decrease which amounts to twenty per cent. of the original rate. By 1970, with the estimated deathrate of 11.1 per 100,000, there would be a further decrease of 25 per cent. from the rate in 1930, and this merely on account of the change in age distribution.

Actually, we can with certainty expect a materially better showing than this, even if no new knowledge and skill is gained in dealing with the problem of childhood diseases; that is, if we merely assume that we will avail ourselves more fully of the knowledge which we now possess. Diphtheria, as we have often pointed out, should be eliminated soon, and scarlet fever a little later, as the result of a general immunization of young children against them. It would not be at all fanciful to suppose that in the course of the next thirty or forty years, medical and

sanitary advances will have practically eliminated these diseases as causes of death in any well ordered community.

The table below presents the effect of the changing age distribution on the separate deathrate from measles, scarlet fever, whooping cough and diphtheria.

We have, in this phenomenon of decreasing deathrates from childhood diseases through the mere change in our age distribution, the companion picture, the cheering reverse, of the gloomy situation to which we drew attention in an earlier issue of this BULLETIN, namely, that the crude deathrate from cancer will, in years to come, increase through the aging of the population alone, even if there is no actual change for the worse in the mortality from this disease at each age of life. The movement that is taking place in the distribution of our population by age is of the nature of a tilting; the curve representing this distribution is falling to lower levels at the younger ages, and is rising at the advanced ages. This pivoting about a point somewhere in midlife, brings it about that deaths from causes characteristic of early ages diminish relatively, those characteristic of late life tend to increase, except in so far as extraneous causes, not directly related to the age distribution, may modify the picture.

Deaths per 100,000 Population, from Four Communicable Diseases of Childhood, Showing Effect of Changing Age Distribution. Age-Specific Deathrate Held Constant as of 1930 in Observed Age Distribution from 1850 to 1930; and in Estimated Age Distribution 1940 to 1970

YEAR	TOTAL FROM FOUR SPECIFIED CAUSES	MEASLES	SCARLET FEVER	WHOOPING COUGH	DIPHTHERIA
1850	22.6	4.9	2.7	7.8	7.2
1860	22.8	4.9	2.7	8.0	7.2
1870	21.3	4.6	2.5	7.4	6.8
1880	20.9	4.5	2.5	7.2	6.7
1890	18.9	4.1	2.3	6.4	6.1
1900	18.6	4.0	2.3	6.3	6.0
1910	17.7	3.8	2.2	6.0	5.7
1920	17.0	3.7	2.1	5.7	5.5
1930*	14.8	3.2	1.9	4.8	4.9
1940	12.7	2.8	1.7	4.1	4.1
1950	11.7	2.6	1.5	3.8	3.8
1960	11.4	2.5	1.5	3.7	3.7
1970	11.1	2.5	1.4	3.6	3.6

*Observed data.

Health Record for September 1933

HEALTH conditions during September 1933 were extremely favorable according to the experience of the millions of Industrial policyholders of the Metropolitan Life Insurance Company. Only once before

has the deathrate of 7.4 per 1,000 policyholders, registered for that month this year, been equaled at the corresponding calendar period, namely, in 1922.

Comparison with the rates recorded in September 1932, shows lower mortality in September of the current year for most of the principal causes of death, but cancer and diabetes still continue to take a rising toll of life. The deathrates, per 100,000, from these two diseases for September of this year were, respectively, 93.1 and 22.5, as compared with 90.0 and 19.2 during September of last year. Fatal automobile accidents also took a sharp up-turn; the deathrate from this cause rose from 21.6 in September 1932, to 25.6 in the same month of this year, an increase of about 18.5 per cent. On the other hand, gratifying decreases were noted in diarrhea and enteritis and in the puerperal diseases.

The favorable health conditions observed among the Industrial policyholders of the Metropolitan Life Insurance Company have likewise prevailed in the general population. The combined deathrate in September for 85 of the largest cities, with an aggregate population of 37 million, was 9.7 per 1,000 estimated population. This rate is very favorable, and is only slightly higher than those reported by these cities in the preceding month of August and also in September of last year.

Diseases that showed increased incidence in September over August were diphtheria, influenza, poliomyelitis, scarlet fever and smallpox; those which declined in prevalence were measles and typhoid fever. The increase in diphtheria was especially notable in the States of Virginia, North Carolina, Kentucky and Tennessee. The disease which showed the largest increase was scarlet fever; this almost doubled last year's incidence during September, according to the reports of 43 states.

Word has been received from the Bureau of the Census at Washington, that the State of Texas has at last been admitted to both the Death and the Birth Registration Areas of the United States; this makes the registration of births and deaths universal throughout the United States, since the State of South Dakota was admitted to the Birth Registration Area early in June. For the first time in its history, the United States will be able to report birthrates and deathrates for the entire population, as is done in other civilized countries.

The New Haven Department of Health and Education will continue the plan followed last year in the city schools to detect all tuberculosis among school children. The Connecticut Health Department is planning to initiate a similar campaign throughout the State.

A survey of public health activities in Cincinnati and in Hamilton County has been started by Dr. JOSEPH L. MOUNTIN, Surgeon of the United States Public Health Service. The survey will cover health departments, hospitals, clinics, school health, and other activities in the health field.

The following table shows the mortality among Industrial policyholders for September 1933; August 1933, and September 1932, together with the cumulative rates for the first nine months of each year.

METROPOLITAN LIFE INSURANCE COMPANY

Deathrates per 100,000 for Principal Causes. Weekly Premium-Paying Business in Industrial Department. All Ages (Annual Basis).*

MONTHS OF SEPTEMBER 1933; AUGUST 1933, AND SEPTEMBER 1932

CAUSES OF DEATH	ANNUAL RATE PER 100,000 LIVES EXPOSED*				
	Sept. 1933	Aug. 1933	Sept. 1932	Cumulative January-September	
				1933	1932
TOTAL—ALL CAUSES	744.6	814.5	761.9	884.1	862.6
Typhoid fever	2.4	3.4	2.5	1.5	1.5
Measles	.4	.2	.3	1.8	2.1
Scarlet fever	1.4	.8	.6	2.8	3.0
Whooping cough	2.2	2.8	2.6	2.5	3.4
Diphtheria	1.6	1.6	2.3	2.1	3.8
Influenza	3.5	3.4	3.7	23.6	19.0
Tuberculosis (All forms)	60.3	65.9	62.2	67.6	71.8
Tuberculosis of respiratory system	54.6	59.4	55.3	60.4	63.3
Cancer (All forms)	93.1	99.0	90.0	94.8	89.7
Diabetes mellitus	22.5	18.4	19.2	24.4	22.5
Cerebral hemorrhage; apoplexy	51.4	59.1	54.3	65.0	62.2
Diseases of heart†	125.4	145.0	134.2	165.3	155.7
Pneumonia (All forms)	29.8	32.9	28.8	64.3	66.5
Other respiratory diseases	7.5	7.3	6.5	10.0	9.3
Diarrhea and enteritis	19.0	16.0	24.5	10.6	11.5
Chronic nephritis (Bright's disease)	58.5	63.9	59.7	68.7	68.2
Puerperal state—Total	7.7	9.5	11.6	9.8	11.0
Suicides	9.7	10.6	9.7	10.4	10.9
Homicides	5.9	5.7	6.2	6.1	6.1
Accidents—Total	61.8	70.7	64.1	57.0	55.8
Automobile accidents	25.6	21.5	21.6	19.2	18.7
All other diseases and conditions	180.6	198.3	178.9	195.6	188.7

*The rates for 1933 are subject to slight correction, since they are based on provisional estimates of lives exposed to risk.

†Excludes pericarditis, acute endocarditis, acute myocarditis and angina pectoris.

Correspondence on the subjects discussed in these BULLETINS may be addressed to: The Editor

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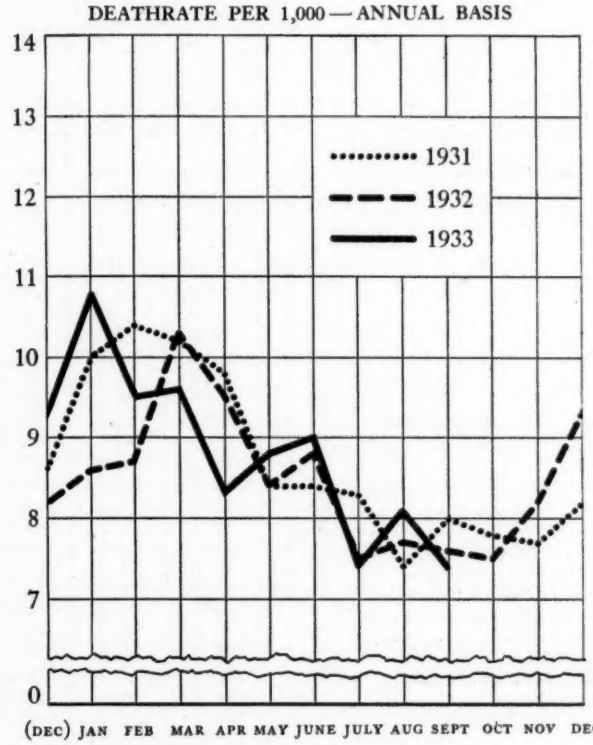
DEATHRATES FROM ALL CAUSES

in the Metropolitan Life Insurance Company
Industrial Department



1931	10.0	10.4	10.2	9.8	8.4	8.4	8.3	7.4	8.0	7.8	7.7	8.2
1932	8.6	8.7	10.3	9.5	8.4	8.8	7.5	7.7	7.6	7.5	8.2	9.3
1933*	10.8	9.5	9.6	8.3	8.8	9.0	7.4	8.1	7.4			

**Rates for 1933 are provisional.*

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